reacting each sample with one of the protein reactive reagents to provide proteins bound to the protein reactive reagent, whereby such bound proteins are differentially labeled with stable isotopes;

capturing bound proteins of the samples using a capture reagent that selectively binds the binding agent of the protein reactive reagent;

releasing captured bound proteins from the capture reagent by disrupting the interaction between the binding agent and the capture reagent;

detecting the amount of released bound proteins; and

comparing the amount of released bound proteins from one sample to the amount of released bound proteins from one or more other samples.

7. (Once Amended) The method of claim 1, wherein a plurality of proteins are detected and identified in one or more of the two or more samples.

8. (Once Amended) The method of claim 3, wherein all of the proteins in one or more of the two or more samples are identified.

9. (Once Amended) The method of claim 1, wherein the two or more samples are combined after being reacted with a protein reactive reagent and before the bound proteins of the samples are captured.

12. (Once Amended) The method of claim 9, wherein each of the two or more samples are taken at different times, or contain proteins expressed in response to different environmental or nutritional conditions, or different chemical or physical stimuli.

24. (Once Amended) A method of detecting different types of phosphorylated amino acid residues in one or more proteins, the method comprising:

providing one or more samples containing one or more proteins;

removing the phosphate group from at least one serine residue or at least one threonine residue of at least one protein in each sample;

removing the phosphate group from at least one tyrosine residue of at least one protein in each sample;

tagging the at least one serine residue or the at least one threonine residue with substantially chemically identical and differentially isotopically labeled protein reactive reagents for each sample, wherein the protein reactive reagents satisfies the formula:

B-L-PhRG

wherein B is a binding agent that selectively binds to a capture reagent, L is a linker group having one or more atoms that are differentially labeled with one or more stable isotopes, and PhRG is a phosphate reactive group that selectively reacts with amino acid residues that were formerly phosphorylated;

tagging the at least one tyrosine residue with substantially chemically identical and differentially isotopically labeled protein reactive reagents for each sample, which are differentially isotopically labeled relative to the protein reactive reagents used to tag the at least one serine residue of the at least one threonine residue, wherein the protein reactive reagents satisfies the formula:

B-L-PhRG

wherein B is a binding agent that selectively binds to a capture reagent, L is a linker group having one or more atoms that are differentially labeled with one or more stable isotopes, and PhRG is a phosphate reactive group that selectively reacts with amino acid residues that were formerly phosphorylated; and

detecting the tagged amino acid residues.